CLAIMS

1. A method of activating an organic coating to enhance adhesion of the coating to a further coating and/or to other entities comprising applying a solvent and an adhesion promoter to a surface of the organic coating, wherein contact of the organic coating with the solvent or the solvent and adhesion promoter combination results in swelling of the organic coating.

2. A method according to claim 1, in which the adhesion promoter is a compound having at least one functional group.

3. A method according to claim 2, in which the adhesion promoter is a compound having two or more functional groups which are of the same or different functionality.

4. A method according to claim 2 or claim 3, in which the functional group is nucleophilic.

5. A method according to claim 4, in which the functional group is selected from amine, alcohol, carboxylic acid, amine, ester, thiol, ether, epoxy, isocyanate, isothiocyanate and anhydride groups.

6. A method according to claim 5, in which the functional group is an amine and/or alcohol group.

7. A method according to claim 1 or claim 2, in which the adhesion promoter is selected from linear and branched polyethylene imines (PEI); amine, epoxy, isocyanate and/or hydroxyl terminated polyether glycols; dendrimers; low molecular weight amines; aminosilanes; epoxysilcones; glycidylethers; aziridines and acids or combinations thereof.

8. A method according to claim 7, in which the amine, epoxy, isocyanate and/or hydroxyl terminated polyether glycols are selected from polyethylene glycol, polypropylene glycol and polyethylene oxide.

9. A method according to claim 7, in which the dendrimers are selected from polypropylene imine octamine dendrimer and polypropylene imine tetraamine dendrimer.

10. A method according to claim 7, in which the low molecular weight amines are selected from ethylene diamine, diethylene tetraamine, triethylene tetraamine (TETA), tetraethylene pentamine, pentaethylene hexamine, piperazine, aminoethylpiperazine, 1,4-bis(3-aminopropyl)piperazine, N,N'-bis(3-aminopropyl)ethylenediamine, 4,9-dioxa-1,12-dodecanediamine, 2,2'-(ethyleneioxy)bis(ethylamine), 4,7,10-trioxatridecane-1,13-diamine (TODA), 4,7-dioxadecane-1,10-diamine (DODA), polyetheramine T 403, N,N-bis (3-aminopropyl)-ethylene diamine, 3-2(2-aminoethyl)aminopropyl amine, dipropyltriamine and 4,4'diamino-dicyclohexylamine.

11. A method according to claim 10, in which the low molecular weight amines are selected from TODA and DODA.

12. A method according to claim 7, in which the aminosilanes are selected from trimethoxysilyl (propyl)diethylenetriamine.

13. A method according to claim 7, in which the glycidylethers are selected from trimethanolpropane triglycidylether and polyethylene glycol digycidyl ethers.

14. A method according to claim 7, in which the aziridine is trimethylolpropanetris (3-aziridino propionate).

15. A method according to claim 7, in which the acid is polyethylene glycoldicarboxylic acid.

16. A method according to claim 1, in which the adhesion promoter has a molecular weight less than about 100,000.

17. A method according to claim 16, in which the adhesion promoter has a molecular weight less than about 10,000.

18. A method according to claim 1, in which two or more adhesion promoters are present.

19. A method according to claim 18, in which high and low molecular weight adhesion promoters are present.

20. A method according to claim 19, in which the high and low molecular weight adhesion promoters are high and low molecular weight polyether glycols.

21. A method according to claim 20, in which the high and low molecular weight polyether glycols are 4,9-dioxa-1, 12-dodecane diamine and polypropylene glycol, respectively.

22. A method according to claim 18, in which the adhesive promoter is a combination of aminosilane and epoxy compounds; 4, 7, 10-trioxatridecone-1, 13-diamine and epoxy silanes; aziridines and trimethylolpropanetris (3-aziridino propionate); aziridine and acids; or aziridine and glycols.

23. A method according to claim 1, in which the adhesion promoter is present in an amount more than about 0.01% based on the total weight of the combination of solvent and adhesion promoter.

24. A method according to claim 1, in which the adhesion promoter is present in an amount of about 1% to about 50% based on the total weight of the combination of solvent and adhesion promoter.

25. A method according to claim 1, in which the solvent is an organic solvent.

26. A method according to claim 25, in which the organic solvent is selected from ester based solvents, ketones, alcohols, ethers, amides, aromatics and halogenated solvents.

27. A method according to claim 26, in which the solvent is selected from ethyl acetate, isopropyl acetate, tertiary butyl acetate, glycolether acetates based on ethyleneglycol and propylene glycol repeat units, methyl amyl ketone, methyl isoamyl ketone, benzyl alcohol, isopropylalcohol, glycoldiethers, N-methyl pyrrolidinone, dichloromethane and dichloroethylene.

28. A method according to claim 26 in which the solvent is a combination of N-methyl pyrrolidinone and ethyl acetate; dichloromethane and benzyl alcohol; ethyl acetate and benzyl alcohol; ethyl acetate and diglycol ether dimethyl ether; or isopropylalcohol and ethoxyetheylacetate.

29. A method according to claim 1, in which the solvent is present in an amount less than about 99.9% based on the total weight of the combination of solvent and adhesion promoter.

30. A method according to claim 29, in which the solvent is present in an amount of about 50 to about 99.9% based on the total weight of the combination of solvent and adhesion promoter.

31. A method according to claim 1, in which an additive is also applied to the organic coating.

32. A method according to claim 31, in which the additive is selected from rheology modifiers, film formers, wetting agents, surfactants, dispersants, substrate cling agents, anti-foaming agents, anti-corrosion reagents, stabilizers, leveling agents, pigments and dyes.

33. A method according to claim 31, in which the additive is present in an amount of less than about 10% based on the total weight of the combination of solvent, adhesion promoter and additive.

34. A method according to claim 1 or claim 31, in which the solvent, adhesion promoter and additive are applied either simultaneously, sequentially or separately.

35. A method according to claim 1 or claim 31, in which the solvent, adhesion promoter and additive are applied simultaneously in the form of an activation treatment.

36. A method according to claim 1 or claim 31, in which the solvent, adhesion promoter and additive are applied via a spray, brush, dip, knife, blade, hose,

roller, wipe,curtain, flood, flow, mist, pipette or combinations thereof.

37. A method according to claim 1, in which the organic coating is a polyurethane, epoxy, polyester, polycarbonate and/or acrylic coating.

38. A method according to claim 1, in which the other entities are selected from adhesives, sealants, pressure sensitive decals and logos.

39. A method according to claim 1, in which excess solvent and/or adhesion promoter is removed by solvent or water rinsing; dry, water or solvent wiping; air or gas knife; vacuum application; squeegee; and/or natural or forced convection evaporation.

40. A coated substrate having an activated organic coating, wherein the adhesion of the activated coating to a further coating and/or other entities has been enhanced by application of a solvent and an adhesion promoter to the surface of the activated coating such that contact of the organic coating with the solvent or the solvent and adhesion promoter combination results in swelling of the organic coating.

41. A coated substrate according to claim 40, in which the substrate is a metal, composite or a material containing plastics, glass, wood or fabric.

42. An activation treatment for an organic coating to enhance adhesion of the coating to a further coating and/or other entities comprising an adhesion promoter and a solvent, wherein contact of the organic coating with the solvent or the solvent and adhesion promoter combination results in swelling of the organic coating.

43. A method for the preparation of the activation treatment according to claim 42, comprising the step of mixing the solvent with the adhesion promoter.